

PROCEEDINGS
OF THE
BIOLOGICAL SOCIETY OF WASHINGTONON THE MEXICAN SNAKES OF THE GENUS
PLIOCERCUS.

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Thirty six specimens of *Pliocercus* now in the collections of the U. S. National Museum, and sixteen in the E. H. Taylor-H. M. Smith collection, are referable to the highly composite *Urotheca elapoides* of Boulenger (Cat. Snakes Brit. Mus., vol. 2, 1894, pp. 182-183). Two very different formenkreise were included by him in that species, one the *elapoides* series occurring from central Mexico (Veracruz) to Guatemala, the other the *euryzonus* series extending (with hiatus) from northern Veracruz to South America.

Each of these series is composed of two forms now described and named; the collections examined add one form not previously named to each series.

The present study was completed, and a third of the material utilized was collected, during tenure of the Walter Rathbone Bacon Traveling Scholarship. I am indebted to Dr. E. H. Taylor for generous loan of material and for other assistance.

Pliocercus elapoides elapoides Cope.

Pliocercus elapoides Cope, Proc. Acad. Nat. Sci. Phila., 1860, pp. 253-254 (Jalapa, Veracruz).

Elapochrous deppei Peters, Monatsb. Berl. Akad., 1860, pp. 294-295, fig. 2 (Mexico).

Liophis tricinctus Jan, Arch. Zool. Anat. Fis., vol. 2, 1863, p. 301; Jan and Sordelli, Icon Gén., livr. 18, 1866, pl. 4, figs. 4-6 (Mexico).

Diagnosis.—Black bands in triads, the outer two as broad as or broader than yellow bands at least on tail (rarely narrower on body); triads on body 9 to 15 (9 to 10 in males, 9 to 15 in females); triads on tail 5 to 8; yellow band across head narrow, anterior and posterior portions of parietals black, posterior edge of frontal rarely light (on one specimen only); 127 to 131 ventrals in males, 133 to 144 in females; caudals maximum 100 in females, 106 in males; usually 8 or 9 infralabials.

Range.—Central and southern Veracruz.

Specimens Examined.—Twenty-four, all from Veracruz: Cuautlapan (U. S. N. M. 110764-6; EHT-HMS 1776, 5255, 23484-92); Mirador (U. S. N. M. 6368, 25029-30); Orizaba (U. S. N. M. 4383, 6323, 12125; EHT-HMS 1421); Potrero Viejo (U. S. N. M. 110763; EHT-HMS 1580, 5087).

Remarks.—This form differs from *diastemus* in having a higher average number of ventrals and lower average number of caudals; outer black bands of each triad as broad as or broader than the yellow bands (narrower than yellow bands in *diastemus*, or absent); usually irregular dark markings on the red areas (not in *diastemus*); usually more numerous triads (5 to 10 in *diastemus*); and usually 9 or less infralabials (usually 10 in *diastemus*). From *laticollaris* it differs by having a narrower neck band (posterior tip of frontal as well as all of parietals yellow in *laticollaris*); bands of triads broader and usually irregular dark markings present on the red areas (markings dorsally in *laticollaris* as in *diastemus*); and perhaps by usually fewer triads on body (13 in a male, 16 and 18 in two females of *laticollaris*).

SCALE COUNTS OF *Pliocercus e. elapoides*.

Number	Sex	Ventrals	Caudals	Upper Labials	Lower Labials	Labials Touch Chinshields	Triads
4383	♀	136	.....	8-9	9-10	5-5	12-?
6368	♀	135	.....	8-8	9-9	5-5	15-?
12125	♀	144	.....	8-8	9-10	5-5	10-?
25029	♀	136	.....	8-8	9-9	5-5	13-7
25030	♀	135	.....	8-8	9-9	5-5	10-?
110763	♀	134	.....	8-8	9-9	5-5	10-?
110765	♀	137	95	8-8	8-8	5-5	9-5
110766	♀	138	98	8-8	8-8	4-4	12-6
1580	♀	134	.....	7-8	9-9	5-5	9-?
5087	♀	136	100	8-8	9-9	5-5	14-7
23484	♀	93	8-8	9-?	5-5	11-7
23485	♀	139	94	8-8	9-9	5-5	11-6
23486	♀	139	.....	8-8	9-9	5-5	11-?
23487	♀	135	.....	8-8	9-9	5-5	10-?
23488	♀	136	.....	8-8	8-9	4-5	14-?
23489	♀	137	99	8-8	9-9	5-5	9-6
23490	♀	134	85	8-8	9-9	5-5	11-7
23491	♀	139	.....	8-8	9-9	5-5	12-?
23492	♀	133	92	8-8	9-10	5-6	13-8
1776	♂	128	103	8-8	9-9	5-5	10-7
1421	♂	127	.....	8-8	9-9	5-5	9-?
5255	♂	129	106	.....	.....	5-5	10-6
6323	♂	131	88	8-8	9-9	5-5	9-6
110764	♂	131	.....	8-8	9-9	5-5	9-5

Pliocercus elapoides diastemus (Bocourt).

Liophis elapoides diastema Bocourt, Miss. Sci. Mex., Rept., 1886, pp. 636-637, pl. 41, fig. 8 (Plateau of Guatemala).

Diagnosis.—Black bands single or triad, but if the latter the outer bands narrower than the yellow bands; triads or single bands 5 to 10 on body, most complete, 4 to 6 on tail; yellow band across head not as long as parietals, sometimes extending to posterior edges of latter, but not includ-

ing any portion of frontal; ventrals 123 to 128 in males, 132 to 137 in females; caudals minimum 98 in females, 115 in males; infralabials usually 10.

Range.—Pacific slopes of southern Chiapas and Guatemala.

Specimens examined.—Nine.

Locality records.—Mt. Ovando, 6500 ft., near Escuintla, Chiapas (No. 110768; La Esperanza, Cruz de Piedra and Las Gradass, all near Escuintla, Chiapas (Nos. 110769–73); Chicharras, Chiapas (Nos. 46437–8); Finca El Ciprés, Volcán Zunil, Guatemala (Calif. Acad. Sci. Nos. 66910–66916).

Remarks.—This form is rather well-defined, differing from typical *elapoides* in average number of ventrals and caudals, average number of infralabials, character of black bands and number of single bands or triads.

In some specimens the outer bands of the triads are very narrow, in others completely missing.

An intergrade between this and *elapoides* may be represented by No. 62088, collected by Sumichrast at an unknown locality (possibly Santa Efigenia, Oaxaca, where, according to his notes in *La Nat.*, vol. 6, 1882, p. 42, he secured specimens of this species). In color pattern it is nearly typical of *diastemus*, the outer bands of the triads being absent on the body (except following the first yellow band on neck). It is like typical *elapoides*, however, in ventral count (142, female); number of infralabials (9); and in having the outer bands of the triads present and broad on the tail. Since the specimen very likely comes from a locality intermediate between the known ranges of *elapoides* and *diastemus*, its intermediate characters indicate the specimen may be an intergrade. On the other hand it may represent the form which occurs on Pacific slopes north of the Isthmus of Tehuantepec.

SCALE COUNTS OF *Pliocercus e. diastemus*.¹

Number	Sex	Ventrals	Caudals	Upper Labials	Lower Labials	Labials Touch Chinshields	Triads
110768	♀	133	.....	8–8	10–10	5–5	9–?
110769	♀	133	101	8–8	10–10	5–5	8–5
110771	♀	136	98	8–8	9–10	5–5	9–4
110772	♀	133	100	8–9	10–10	5–5	9–6
110773	♀	130	103	8–9	10–10	5–5	10–6
66910	♀	129	.....	.....	10–10	.....	.....
66913	♀?	132	.....	.....	10–10	.....	.....
66914	♀	132	.....	.....	10–10	.....	.....
66915	♀?	137	.....	.....	10–10	.....	.....
46437	♂	124	.....	8–8	10–10	5–5	9–?
46438	♂	124	.....	8–8	9–10	5–5	8–?
110772	♂	125	115	8–8	10–10	5–5	7–6
110770	♂	123	.....	9–9	10–10	5–5	10–?
66911	♂	128	115	.....	10–10	.....	.....
66912	♂	124	.....	.....	9–9	.....	.....
66916	♂	123	.....	.....	10–10	.....	.....

¹The scale counts of the California Academy of Sciences specimens are those given by Slevin, *Proc. Calif. Acad. Sci.*, ser. 4, vol. 23, 1939, p. 402.

***Pliocercus elapoides laticollaris*, subsp. nov.**

Holotype.—U. S. National Museum No. 110767, female, Tenosique, Tabasco, H. M. Smith. *Paratypes*. EHT-HMS 11642, Tres Brazos, Campeche, and No. 11643, Encarnación, Campeche.

Diagnosis.—Bands single or triad, but if the latter the outer bands not as wide as yellow bands; triads or single bands 13 to 18 on body, 10 to 12 on tail; yellow head band involving nearly all of parietals, as well as posterior tip of frontal; ventrals 128 in a male, 127 to 134 in two females; caudals 97 in two females; nine infralabials.

Description of holotype.—Internasals small, one-third area of prefrontals; latter extending onto sides of head; frontal broad, pentagonal, subequal in length to suture between parietals; nasal completely divided, in contact with two labials; loreal large, quadrangular, in contact with two labials and one (upper) preocular; two preoculars, the lower small and wedged between third and fourth labials; two postoculars, lower smaller; temporals 1-1-2, anterior elongate; supralabials 8-8, fourth and fifth entering orbit, last two largest, last elongate; nine infralabials, five (four) in contact with anterior chinshields; latter a little longer than posterior chinshields; two labials in contact with latter.

Dorsals in 17 rows, smooth, not pitted; ventrals 127; anal divided; caudals 97.

Head, anterior to a line between posterior edges of eye, black, except for rostral and lower edges of labials (yellow); a very broad, yellow band across head, involving posterior edges of frontal and supraoculars, all of parietals and all of temporals except tips of tertiary temporals; a black nuchal band covering nearly five scale lengths medially, barely reaching edges of ventrals; following this a series of 15 black bands on body, 10 on tail, all (except last on tail) of about equal length, each covering about two and one half scale lengths; most black bands on body interrupted on midventer, all tail bands complete; black bands bordered by a yellow ring on each side, covering one or one and one-half scale lengths, all complete; separating the yellow rings are complete red bands, each covering nearly five scale lengths; most dorsal scales in red areas black-tipped.

Paratypes.—The ventrals of the male paratype count 128 (tail broken); the ventrals and caudals respectively of the female count 134 and 97. The black bands are in triads, separated by narrow yellow bands, but in the female the narrower black bands are practically obsolete, and in the male they are very narrow. A dark spot occurs at the posterior apex of most of the scales in the red bands. There are 18 primary black annuli on the body of the female, 12 on the tail; 13 red annuli occur on the body of the male. The primary black bands are complete ventrally.

Remarks.—To the present form belong the specimens referred by Bocourt (Miss. Sci. Mex., Rept., 1886, pp. 635-6) to typical *elapoides* (pl. 41, fig. 6). Bocourt had specimens of all three forms of *elapoides*, but *laticollaris* was referred to *e. elapoides*; typical *elapoides* to *e. aequalis*; and *e. diastema* was named by him for the first time.

This subspecies differs from typical *elapoides* in the great width of the

yellow head band; near or complete loss of the outer black bands of the triads; greater number of tail bands and body bands; and perhaps by fewer ventrals.

It is to be emphasized that all three forms of *elapoides* occupy widely different faunal provinces. Specimens from the Pacific slopes north of the Isthmus of Tehuantepec probably will prove distinguishable from the forms here diagnosed, since in species having a distribution on the Atlantic coast and in southern Chiapas and also having a differentiation of geographic subspecies as in *elapoides*, invariably the Guerrero form is still different.

***Pliocercus bicolor*, sp. nov.**

Holotype.—U. S. National Museum No. 25203, female, from Tuxpan, Veracruz, collected by G. Lincecum.

Diagnosis.—Bands alternating black and red, the two of nearly equal length (black slightly longer) middorsally on body; black tail bands twice width of interspaces; black bands 14 on body in type; no secondary tail bands, primary bands few; no markings on infralabials; black head cap involving only extreme anterior tip of primary temporal.

Description of holotype.—Head badly battered, portions missing, supralabials eight, fourth and fifth entering eye, seventh perhaps largest; nasal divided, in contact with two labials; loreal large, quadrangular, in contact with two labials; two preoculars, lower small and wedged between third and fourth labials; two postoculars, lower smaller; temporals 1-1; infralabials nine, five in contact with anterior chinshields, two in contact with posterior.

Scales in 17 rows, smooth, not pitted; ventrals 132; anal divided; tail incomplete.

Entire snout (sides and top) black, posterior to a point slightly behind posterior angle of frontal; entire supralabial border yellow; a yellow band across top of head, anteriorly reaching nearly to postoculars; this followed by the first of a series of 14 black rings, each covering four to seven scale lengths middorsally, separated from each other by red bands covering three to six scale lengths; the red spaces nearly equal to black bands medially, covering about one scale length less than adjoining bands; some of the dorsal scales in the red area black-tipped; black tail rings about twice width of interspaces; red interspaces on tail with very few, small, irregularly placed black spots; chin and gular region light (yellow?) with no black markings whatever; light spaces on belly and tail (between black rings) without marks.

Remarks.—This very distinct form is related to *dimidiatus* and *aequalis*, all having alternating red and black rings, without yellow rings. From *dimidiatus*² it differs by having wider red areas (in all *dimidiatus* the body bands are two to three times as wide as the red rings, the tail bands three times as wide as interspaces); no markings on chin or gular region (all *dimidiatus* have the anterior infralabials black); black head cap less extensive (in *dimidiatus* it extends at least to middle, usually to posterior end of primary temporal); no indentation of black head cap by a light area on

² Thirteen specimens examined, from Nicaragua and Costa Rica.

anterior labials (in *dimidiatus* a light spot, fused with light labial border, on portions of the second and third labials).

In some respects *aequalis* of Guatemala is more like *bicolor*, as the black head cap is identical, the gular and chin region is immaculate, and the black bands on body equal the width of the red ones. It has more numerous black body rings, however (25 to 27), and narrower, much more numerous, complete tail rings (about 17) that are separated from each other by areas equal to the size of the primary black rings. Each of the red interspaces between the primary, complete rings encloses an incomplete, secondary black ring.

Dunn and Bailey (Bull. Mus. Comp. Zool., vol. 86, 1939, p. 12; Proc. Acad. Nat. Sci. Phila., vol. 92, 1940, p. 121) treat *dimidiatus* and *eurizonus* as subspecies. It can not now be stated whether *aequalis* and *bicolor* are also subspecies of *eurizonus*, but at least it is very probable that all four of these are members of the same formenkreis, and that they replace each other in a vicariating series from north to south. In the same series there is a constant trend of pattern change from *eurizonus* in the south, with narrow red bands, to *bicolor* in the north, with the broadest red bands. A comparable trend toward elimination of the black on the head is also observable, from *eurizonus* with nearly a uniformly black head to *bicolor* (and *aequalis*) with the least black on head of all.

KEY TO MEXICAN *Pliocercus*.

1. Rings on body alternating red and black, all subequal in length (black rings a little the longer).....*bicolor*.
 Yellow rings present on body, as well as red and black; black rings in triads or, if single, the spaces between them considerably greater than their own length.....2
2. Black rings single on body, or, if triad, the outer rings considerably narrower than the yellow rings.....3
 Black rings triad on body and tail, the outer rings of each triad as long as or longer than yellow rings; red areas frequently black-spotted; posterior end of frontal very rarely light; infralabials seldom 10 (usually less); bands on tail not over eight, on body not over 11 in males, 15 in females.....*elapoides elapoides*.
3. Yellow head band very broad, including posterior tip of frontal; nine infralabials; primary black rings on body 13 to 18, on tail 10 to 12.....*elapoides laticollaris*.
 Yellow head band narrower, the anterior tips of parietals and posterior tip of frontal always black; usually ten infralabials; primary black rings on body 5 to 10, on tail 4 to 6.....
elapoides diastemus.